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EXAMINER

KIM, PAUL

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/767,216	Applicant(s) LIPSON ET AL.	
	Examiner PAUL KIM	Art Unit 2169	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 21-24 and 36-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 21-24 and 36-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. This Office action is responsive to the following communication: Amendment filed on 30 December 2008.
2. Claims 1-5, 21-24, and 36-39 are pending and present for examination.

Response to Amendment

3. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Objections

4. **Claims 1 and 22** are objected to because of the following informalities: the newly added claim limitation of "the matching algorithm comprises a plurality factors" should be recited as "the matching algorithm comprises a plurality of factors". Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1-5, 21-24, and 36-39** are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al, "Tools and techniques for color image retrieval" (NPL, hereinafter referred to as SMITH), published on March 1996 by Proc. SPIE Vol. 2670, p. 426-437, in view of Barber et al (U.S. Patent No. 5,579,471, hereinafter referred to as BARBER), filed on 23 March 1994, and issued on 26 November 1996.

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7. **As per independent claims 1 and 22, SMITH, in combination with BARBER, discloses:**

An image processing system for searching images on a network, the image process system comprising:

- (a) a search engine {See SMITH, page 3, subsection D, wherein this reads over "[t]he query is communicated to the VisualSEEK server on the World Wide Web through the Common Gateway Interface (CGI). The server answers the user's query by accessing the extracted meta-data that describes the images and videos in the archive"};
- (b) an image analyzer coupled to said search engine, said image analyzer for comparing first and second images provided thereto from said search engine {See SMITH, page 1, section II, wherein this reads over "color indexing by localized or regional color provides for partial or sub-image matching between images"}, wherein:

the first image is associated with a first code {See SMITH, page 2, subsection B, wherein this reads over "[o]nce the image regions are identified, each region is characterized and represented using a feature set"; and page 3, subsection B, wherein this reads over "[a] color histogram is a high-dimensional feature vector typically having greater than 100 dimensions and the comparison of histograms is computationally intensive"} associated with a first predetermined textual annotation {See BARBER, Figure 2; and C5:L56-C6:L26, wherein this reads over "Image n is decomposed into image characteristics including color, texture, size, shape and layout. Arbitrarily, images or image features may be associated with text keywords""},

the second image is associated with a second code {See SMITH, page 2, subsection B, wherein this reads over "[o]nce the image regions are identified, each region is characterized and represented using a feature set"; and page 3, subsection B, wherein this reads over "[a] color histogram is a high-dimensional feature vector typically having greater than 100 dimensions and the comparison of histograms is computationally intensive"} associated with a second predetermined textual annotation {See BARBER, Figure 2; and C5:L56-C6:L26, wherein this reads over "Image n is decomposed into image characteristics including color, texture, size, shape and layout. Arbitrarily, images or image features may be associated with text keywords""},

the first code is descriptive of at least a region of the first image {See SMITH, page 4, subsection A, wherein this reads over "[a] color histogram denotes the joint probabilities of the intensities of the three color channels"},

the second code is descriptive of at least a region of the second image {See SMITH, page 4, subsection A, wherein this reads over "[a] color histogram denotes the joint probabilities of the intensities of the three color channels"}, and

the image analyzer uses a matching algorithm for image analysis of the first and second images along with a comparison of the first and second codes in determining if the first and second images are likely to compare favorably {See SMITH, page 10, wherein this reads over "[t]he color histogram intersection was proposed for color image retrieval" and "[c]olors not present in the user's query image do not contribute to the intersection"}, wherein:

the matching algorithm comprises a plurality factors related to matching that affect how the matching algorithm operates {See SMITH, page 10, wherein this reads over "Four image retrieval techniques were used in the queries: (1) euclidean

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histogram distance, (2) histogram intersection, (3) quadratic histogram distance and (4) color sets"}₄

the plurality of factors comprise at least one of parameters, characteristics, and/or constraints {See SMITH, page 10, wherein this reads over "Histogram intersection ... the intersection of histograms h and g" and "Histogram Quadratic distance ... the quadratic distance formula uses the cross-correlation"}₄

selection or exclusion of an image is analyzed to identify a subset of the plurality of factors {See SMITH, page 11, wherein this reads over "Query 1 ... the color set query was formulated in VisualSEek by simply drawing one purple region and by selecting best match in color and none for match in space" and "Query 1 ... In order to return all 83 sunsets using color histograms ... using color sets all sunset images are found"}₄ and

the matching algorithm is automatically tailored to the subset of the plurality of factors {See SMITH, page 3, wherein this reads over "the user may search for images using both global and local features"}.

While SMITH may fail to expressly disclose a method wherein code is associated with a first predetermined textual annotation, BARBER discloses an invention wherein textual data is associated with specific features and attributes of an image. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above invention suggested by SMITH with the invention as disclosed by BARBER.

One of ordinary skill in the art would have been motivated to do this modification so that the predetermined textual annotations may be used in the retrieval and comparison of images.

8. **As per dependent claims 2 and 24,** SMITH, in combination with BARBER, discloses:

The system of claim 1 further comprising an input system coupled to one of said search engine and said image analyzer, said input system comprising at least one of:

a graphical user interface {See SMITH, Figure 3};

a facsimile system;

a camera system;

a scanner;

a network connection; and

a video system.

9. **As per dependent claim 3,** SMITH, in combination with BARBER, discloses:

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The system of claim 21 wherein the matching algorithm defines at least one particular region of an image and at least one particular measurement to make on pixels within each of the at least one particular image region {See SMITH, page 4, subsection A, wherein this reads over "[t]he color histogram is computed by discerning the colors within the image and counting the number of pixels of each color"}.

10. **As per dependent claim 4**, SMITH, in combination with BARBER, discloses:

The system of claim 3 wherein the matching algorithm defines at least one measurement to make on one or more pixels in an image region neighboring the one particular image region {See SMITH, page 8, subsection E, wherein this reads over "[f]or each of the regions the generative color set c is recorded and the region area and location are measured"}.

11. **As per dependent claims 5 and 23**, SMITH, in combination with BARBER, discloses:

The system of claim 1 further comprising a storage device having at least one image stored therein coupled to at least one of said search engine, and said image analyzer {See SMITH, Figure 2}.

12. **As per dependent claim 21**, SMITH, in combination with BARBER, discloses:

The system of Claim 1 wherein said image analyzer is provided information specific to a particular application to modify a matching algorithm used in determining if the first and second images compare favorably {See SMITH, page 3, wherein this reads over "VisualSEEk supports query by color and texture and spatial-layout"}.

13. **As per dependent claim 36**, SMITH, in combination with BARBER, discloses:

The system of Claim 1, wherein the search algorithm is automatically tailored to a subset of possible image factors that can be automatically analyzed, whereby the image analyzer automatically learns which factors are important in matching images {See SMITH, page 3, wherein this reads over "for a local color region query the user indicates the locations of the color regions by positioning regions on the query grid"}.

14. **As per dependent claim 37**, SMITH, in combination with BARBER, discloses:

The system of Claim 1, wherein:

the second image is part of a plurality of images, which are associated with a plurality of codes {See SMITH, page 11, wherein this reads over "the color set method was able to retrieve all 97 purple region images"},

the image analyzer compares the first code and the plurality of codes to find a subset of the plurality of images that compare favorably, wherein the second image is part of the subset {See SMITH, page 11, wherein this reads over "prior to the trials each of the 3100 images was inspected and assigned a relevance to the purple region query"}.

15. **As per dependent claim 38**, SMITH, in combination with BARBER, discloses:

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The system of Claim 1 wherein at least one of the first and second predetermined textual annotations is human determined {See SMITH, wherein this reads over "retrieve all images that contain a significant purple regions somewhere in the image"}.

16. **As per dependent claim 39**, SMITH, in combination with BARBER, discloses:

The image processing system for processing images stored on the network as recited in claim 22, wherein the first code is textual and derived with manual determination {See SMITH, wherein this reads over "retrieve all images that contain a significant purple regions somewhere in the image"}.

Response to Arguments

17. Applicant's arguments with respect to claim rejections under 35 U.S.C. 102 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL KIM whose telephone number is (571)272-2737. The examiner can normally be reached on M-F, 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tony Mahmoudi can be reached on (571) 272-4078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Paul Kim

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